A PICTURE PROVIDING SERVICE SYSTEM

AND THE METHOD THEREOF

BACKGROUND OF THE INVENTION

Field of the Invention

[0001]   The present invention relates to a picture providing system using a digital camera. In more detail, it relates to a picture providing service system with which users, being connected to a communication network, can use the contents with seeing other users' appearances and the method thereof.

Description of the Related Art

[0002]   As personal computers (PCs) and Internet are being popularized, businesses for providing various contents to users using Internet are being rapidly developed. Among the various contents provided through Internet, chatting service has been being spotlighted as a representative content service from the past generation, when PC communication was being performed through telephone line, to the present.

[0003]   Chatting service is a service with which numbers of users, being connected to a communication network, can talk to each other through messages. Nowadays, owing to the high transmission speed of network and the massive scale of PC, a video chatting service, with which a

1   user can send/receive messages with seeing his (or her) chatting companion's appearance by using

2   an image processing device like a digital camera equipped in his (or her) PC, is being universalized.

3   Different from the prior chatting service only transferring the messages, a video chatting service

4   provides image windows displaying chatters' features so that it can increase the chatting interest.

5   However, a video chatting is generally being accomplished by using a digital camera placed in front

6   of a user, and thus it often causes a problem that the user's background space, which the user does

7   not want to be seen by others, is being disclosed. Besides, in case that numbers of users are

8   connected to a chatting room to use a video chatting service, it is difficult to find any characteristic

9   features in the displayed pictures of the users, and thus it is very hard to identify each of the users

10   in a short period of time.

11   [0004]   To compensate these disadvantages, a method of changing the color-feeling of video data

12   by controlling the hardware options of an image-processing device like setting the image-processing

13   device to be operated in a black-and-white mode. However, this kind of method only changes the

14   overall color composition and still cannot express each user's individual characteristics. Moreover,

15   it has a problem that the displayed picture quality is often distorted according to the configuration

16   of the image-processing device, and thus most users generally use the video data inputted into the

17   image-processing device without any modification.

18   [0005]   Recently, not only in a video chatting service but also in an electronic commerce, Internet

19   meeting, Internet dating service, etc., various types of services, with which the participants can use

20   the contents with seeing other participants' appearance by using an image-processing device, are

21   being developed and provided. In these types of services, however, the inputted picture information

1 is directly displayed on the other users' computers, and thus the individual characteristics can hardly

2 be expressed and the numbers of user-pictures are being displayed similar to one another.

3 ## SUMMARY OF THE INVENTION

4 **[0006]** The present invention is proposed to solve the problems of the prior art mentioned above.

5 It is therefore the object of the present invention to provide a picture providing service system that

6 can express a user's picture characteristically by synthesizing image information into the user

7 information inputted through an image-processing device and the method thereof.

8 **[0007]** It is another object of the present invention to provide a picture providing service system,

9 and the method thereof, that can prevent the degradation of the picture-quality and the color-feeling

10 of a picture, occurred in modification process on the picture information, by synthesizing the user's

11 picture information displayed on a computer without a hardware change of the image-processing

12 device.

13 **[0008]** To achieve the object mentioned above, the present invention provides a picture providing

14 service system that provides picture data to a user, who is using picture-related contents, with being

15 connected to a content providing system providing a service on Internet. The system comprises a user

16 administration means for storing the personal information, identification information and the

17 picture-related information of a user, who wants to use picture-related contents, among the users

18 using the contents with being connected to the content providing system into a database and

19 administrating them; a video data processing means for storing the user's video data inputted through

20 his (or her) PC having a digital camera into the database and editing the video data according to the

1   user's control; an image data processing means for providing various images to the user, and when

2   the user selects a preferred image, storing the selected image into the database and editing the

3   selected image according to the user's demand; and a data synthesizing means for synthesizing the

4   video data and the image data.

5   [0009]   Here, the picture-related contents include the contents used for a video chatting, a video

6   electronic commerce, a video meeting, a video dating service, and so on. In addition, the video data

7   processing means has the functions of partially deleting and/or surface-processing the video data

8   according to the user's control, and the image data processing means has the functions of performing

9   a size-control, an image-combination, and/or a color-change on the selected image data.

10 [0010]   In addition, the present invention also provides a picture providing service method for

11 providing picture data to a user using picture-related contents with being connected to a content

12 providing system providing a service on Internet, characterized by comprising the steps of: (a) when

13 a user, being connected to the content providing system, wants to use one of the picture-related

14 contents, checking that video data is being inputted from the user's PC; (b) if the user's video data

15 is being inputted, checking that the user wants to select an image data; (c) if the user wants to use

16 an image data and selects a preferred image, checking that the user wants that the video data and the

17 image data are to be synthesized together; (d) if the user wants to use the selected image data only

18 without synthesizing the data, transmitting the selected image data to the content providing system;

19 and (e) if the user wants to synthesize the video data and the image data, synthesizing the user's

20 video data and the selected image data and transmitting the synthesized data to the content providing

21 system.

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BRIEF DESCRIPTION OF THE DRAWINGS

[0011]   FIG. 1 is a view illustrating an example of a communication network where a picture providing service system in accordance with the present invention is being applied.

[0012]   FIG. 2 is a structural diagram illustrating the detailed structure of the picture providing service system described in FIG. 1.

[0013]   FIG. 3 is a flowchart illustrating the procedures of a picture providing service method in accordance with the present invention.

[0014]   FIG. 4 is a block diagram illustrating an embodiment of the picture providing service method in a chatting room in accordance with the present invention.

DETAILED DESCRIPTION OF THE EMBODIMENTS

[0015]   Hereinafter, referring to appended drawings, the preferred embodiments of the present invention are described in detail.

[0016]   In the description described hereinafter, "video data" represents the data corresponding a user's actual appearance inputted through an image-processing device, "image data" represents the graphic data able to be synthesized with the video data such as a background image and so forth, and "synthesized data" represents the data obtained by synthesizing the video data and the image data.

FIG. 1 is a view illustrating an example of a communication network where a picture providing service system in accordance with the present invention is being applied.

[0017]   As described in the figure, an image-processing device like a digital camera 110-1~110-n can be installed at a PC 10-1~10-n. With using this kind of PC system, a user can be connected to

1   a content providing system 20 through Internet 30 to use various types of services provided by the

2   content provider. The services provided to the users by the content providing system 20 include the

3   entire services able to be provided through Internet as well as the services, with which the

4   participating users can use the contents with seeing the other users appearances, such as a video

5   chatting, a video electronic commerce, a video meeting, a video dating service, and so on.

6   [0018]   A picture providing service system 40 is a system, connected to a content providing system

7   20, that creates and provides a preferred picture data to a user who is being connected to the content

8   providing system 20 and wants to use picture-related contents. A picture providing service system

9   40 can be operated by the operator of a content providing system 20, or by another operator

10   independent of the content providing system.

11   [0019]   Using a PC 10-1~10-n having a digital camera 110-1~110-n, a user connects to a content

12   providing system 20 through Internet 30. Then, the user, being connected to the content providing

13   system 20, selects a desired service among the various types of services such as chatting, electronic

14   commerce, meeting, dating service, etc.. At this time, the user also selects how to manipulate his (or

15   her) appearance, inputted through the image-processing device, to be disclosed to the others. If the

16   user wants to display the video data inputted into the digital camera 110-1~110-n unmodified, the

17   picture providing service system 40 gives no additional manipulation to the inputted video data and

18   transmits the video data to the content providing system 20. On the other hand, if the user wants to

19   display the video data inputted into the digital camera 110-1~110-n with being synthesized with an

20   additional image, the picture providing service system 40 provides various image information to the

21   user, synthesizes the video data with the image data selected by the user, and transmits the

1 synthesized data to the content providing system 20. In this case, the additional image can be

2 provided by the picture providing service system 40, however, it is also possible that the additional

3 image is selected among the images stored in the user's PC 10-1~10-n or an extra storing means.

4 [0020]   After being connected to the picture providing service system 40, a user can download a

5 data-synthesis-related application program to his (or hers) own PC 10-1~10-n. And then, the process

6 for synthesizing the video data and the image data can be carried out by the user's PC 10-1~10-n

7 using the application program. With this procedure, the load applied to the picture providing service

8 system 40 can be reduced, and thus the data processing speed can be increased.

9 [0021]   If a synthesized data, obtained by synthesizing a video data and an image data as described

10 above, is being displayed, the appearance of the user can be remarkably displayed compared with

11 those of the other users using the unmodified video data.

12 [0022]   FIG. 2 is a structural diagram illustrating the detailed structure of the picture providing

13 service system described in FIG. 1.

14 [0023]   As described in FIG. 2, a picture providing service system 40 in accordance with the

15 present invention comprises a user administration means 402, a video data processing means 404,

16 an image data processing means 406, a data synthesizing means 408, and a database 410. Here, the

17 database 410 includes a user database 412, a video data database 414, an image data database 416,

18 and a synthesized data database 418. These databases can be constituted in a single table or in four

19 different tables respectively.

20 [0024]   The user administration means 402 stores the personal information, the identification

21 information and the picture-related information of a user, who wants to use picture-related contents,

1 among the users using the contents with being connected to the content providing system 20 into the

2 user database 412 and administrates them.

3 [0025] The video data processing means 404 stores the user's video data inputted into the picture

4 providing service system 40 through the digital camera 110-1~110-n into the video data database 414

5 and edits the video data according to the user's control. The image data processing means 406

6 provides various images stored in the image data database 416 of the picture providing service

7 system 40 to the user, and when the user selects a preferred image, stores the selected image data into

8 the image data database 416 for each user, and edits the selected image according to the user's

9 demand.

10 [0026] The image data stored in the image data database 416 includes the images, able to be

11 overlapped on the video data such as a background image, a hairstyle, glasses, clothes, etc., and

12 various types of avatars with which a user can express himself (or herself) by the image data only

13 without using the video data.

14 [0027] Here, the edition of the video data can be carried out by selecting some portion of video

15 data which the user wants to be displayed and deleting the rest of the video data, surface-processing

16 on the video data, and so on. The edition of the image data includes fitting the size of the image,

17 provided by the picture providing service system 40, to the user's face, selecting various partial

18 image data provided by the system and combining them, selecting preferred colors, and the like.

19 [0028] The data synthesizing means 408 synthesizes the video data and the image data. That is

20 to say, when a user, who is using the contents, wants to display his (or her) appearance on the other

21 users' computer-screens by using the synthesized data of the video data and the image data, the data

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1 synthesizing means 408 combines the video data, inputted through the digital camera 110-1~110-n

2 installed at the user's PC 10-1~10-n and edited/stored by the video data processing means 404, and

3 the image data, selected by the user and edited/stored by the image data processing means 406, and

4 then stores the combined data into the synthesized data database 418. Here, the combination of the

5 video data and the image data can be achieved simply by overlapping the pictorial information.

6 [0029]   In another embodiment of the present invention, the process for synthesizing the video data

7 and the image data can be carried out by a user's PC 10-1~10-n by letting the user to download a

8 data-synthesis-related application program from the picture providing service system 40 to his (or

9 hers) own PC 10-1~10-n after being connected to the system 40. With this procedure, the load

10 applied to the picture providing service system 40 can be reduced, and thus the data processing speed

11 can be increased.

12 [0030]   The picture providing service system 40 further comprises a network interface (not

13 described in the figure) for transmitting the process-completed video data, image data, and

14 synthesized data to the content providing system 20. In addition, the user's video data is transmitted

15 to the picture providing service system 40 through the content providing system 20.

16 [0031]   FIG. 3 is a flowchart illustrating the procedures of a picture providing service method in

17 accordance with the present invention.

18 [0032]   The content providing system 20 is connected to the picture providing service system 40

19 to provide picture-related contents to users. And when a user, being connected to the content

20 providing system 20, wants to use picture-related contents, the picture providing service system 40

21 is promptly activated to provide the corresponding picture information to the user's demand. The

1 picture providing service can be provided simultaneously at the beginning of the contents being

2 provided, however, it is also available for a user to change his (or her) appearance while using the

3 contents.

4 **[0033]** The detailed procedures for providing pictures to a user are as follows:

5 **[0034]** When a user, being connected to the content providing system 20, wants to use one of the

6 picture-related contents that the participating users can use with seeing other users' appearances such

7 as a video chatting, a video electronic commerce, a video meeting, a video dating service, etc., the

8 content providing system 20 provides the corresponding content S101. At this time, since the content

9 provided to the user is a picture-related content, the picture providing service system 40 is promptly

10 being activated and checks that the user's video data is being inputted S102. If the user's video data

11 is being inputted, it checks that the user wants to use the video data only or to select additional image

12 data to be used S103.

13 **[0035]** If the user does not select an additional image data, the picture providing service system

14 40 informs that to the content providing system 20, so that the user's video data is being displayed,

15 without any modification, on the computer-monitors of other users using the corresponding content

16 together S104. On the other hand, if the user wants to use additional image data and selects a

17 preferred image, the picture providing service system 40 checks that the user wants to synthesize the

18 image data and the video data or to use the image data only S105.

19 **[0036]** If the user wants to use the selected image data only without synthesizing the data in the

20 step of S105, the picture providing service system 40 transmits the selected image data to the content

21 providing system 20, S106, so that the image data is being displayed on the computer monitors of

1 other users using the corresponding content together. On the other hand, if the user wants to

2 synthesize the data, the data synthesizing means 408 of the picture providing system 40 synthesizes

3 the user's video data and the selected image data S107, stores the synthesized data into the

4 synthesized data database 418, and transmits the synthesized data to the content providing system

5 20, S108. Here, the image data, which is being synthesized with the video data, can be provided by

6 the picture providing service system 40. Or, it can also be selected among the images stored in the

7 user's PC 10-1~10-n or an extra storing means able to be read by the user's PC 10-1~10-n.

8 [0037] In the step S107 of synthesizing the video data and the image data, the video data is first

9 edited by the user selecting a desired portion of the data to be displayed. And then, the synthesized

10 data is produced by overlapping the selected image data onto the edited video data. The process for

11 synthesizing the video data and the image data can be carried out either by the picture providing

12 service system 40 or by the user's PC 10-1~10-n by letting the user to download a

13 data-synthesis-related application program from the picture providing service system 40 to his (or

14 hers) own PC 10-1~10-n.

15 [0038] Besides, if it is noticed that the user's video data is not being inputted in the step S102 of

16 checking that the user's video data is being inputted, the picture providing service system 40 checks

17 that the user wants to selects image data S109. If the user selects image data, it transmits the selected

18 image data to the content providing system 20, S106. Or else, it informs to the content providing

19 system 20 that the user is not using a picture data.

20 [0039] In another embodiment of the present invention, the video data processing means 404 can

21 edit the corresponding video data according to the demand of a user who wants to use the video data

1   only, and the image data processing means 406 can edit the corresponding image data according to

2   the demand of a user who wants to use the image data only. The edition of video data includes a

3   deletion of specific portion, surface processing, etc., and the edition of image data includes

4   size-control, combination-of-images, color selection, and so on.

5   [0040]   FIG. 4 is a block diagram illustrating an embodiment of the picture providing service

6   method in a chatting room in accordance with the present invention.

7   [0041]   In case of a video chatting service, the user displaying windows 102, 104, 106, where the

8   picture information of the participating users (*Rainman*, *Blue*, *Wind*, User1 ~ User4) in a chatting

9   room are being displayed, are appeared on the upper portion of a monitor 100, and the conversation

10   window 108 is appeared on the bottom. Each individual user participating in the chatting room can

11   use video data or image data only, or use synthesized data of video data and image data. Or in

12   occasion, he (or she) does not use any picture data.

13   [0042]   In case that most participating users in a chatting room are displaying themselves by using

14   the video data only, each of the users' appearance displayed on the user displaying windows can

15   hardly express any characteristics distinguishable from one another, and thus the chatting is going

16   on with less interest. However, if a user uses a synthesize data combining the video data and image

17   data according to his (or her) preference, he (or she) can express himself (or herself) by a

18   distinguishable picture from those of the other users. In addition, each user can change his (or her)

19   appearance according to the subject and/or the atmosphere of the chatting room, and thus all the

20   participating users can use the service under the more interesting circumstances.

21   [0043]   As described thereinbefore, the picture providing service system of the present invention

1 can be used by a user while he (or she) is using on-line contents on Internet, however, it can also be

2 used for a user to create his (or her) own character by providing the system able to be stored in CD,

3 ROM-BIOS, or the like. In this case, the entire processes for providing/processing the video/image

4 data and synthesizing the video/image data are being carried out by the user's PC 10-1~10-n.

5 [0044]   As mentioned thereinbefore, the present invention provides a synthesized picture data,

6 produced by combining an image data satisfying a user's preference into the video data inputted

7 through an image-processing device, to the user using picture-related contents, so that the user can

8 display himself (or herself) with expressing his (or her) individual characteristics.

9 [0045]   In addition, a user can change his (or her) appearance according to the subject and/or the

10 atmosphere of a service by using the present invention, and thus all the participating users can use

11 the service under the more interesting circumstances.

12 [0046]   Since those having ordinary knowledge and skill in the art of the present invention will

13 recognize additional modifications and applications within the scope thereof, the present invention

14 is not limited to the embodiments and drawings described above. The scope of the present invention

15 is therefore to be represented by the claims that will be described hereinafter, and it is needless to

16 say that the claims of the present invention are to be interpreted to include all the non-inventive

17 modifications and applications able to be derived from the subjects of themselves and their

18 equivalents.